

THE COUNCIL ON OPEN DATA ANNUAL REPORT
January 10, 2018

The Honorable Larry Hogan
Governor
State House
Annapolis, MD 21401 - 1925

The Honorable Thomas V. Mike Miller, Jr.
President of the Senate
State House, H-107
Annapolis, MD 21401-1991

The Honorable Michael E. Busch
Speaker of the House
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Executive Summary

Looking for data on Maryland population demographics by county? How about trends in job growth for Marylanders? Need data on pollution reduction in the Chesapeake Bay? How about data on health trends of Marylanders? These datasets and much more are available, to the public, on Maryland's open data portals.

The Maryland Council on Open Data supports the success of Maryland's Open Data Act to make state data open and easy to access by the public. The Maryland Council on Open Data accomplishes its mission by providing strategic guidance and input on programmatic operations for open data. Quarterly meetings of the Council include discussion on data transparency, opportunities for adding new datasets to Maryland's open data portals, and how to best promote the use of open data to Marylanders in the spirit of Changing Maryland for the Better.



The Maryland Council on Open Data has 37 members, including Cabinet agencies, five county representatives, and five private citizens. Council meetings are open to the public. Meeting transcripts, Open Data Act law documents, access to Maryland's open data portals and other information is available at opendata.maryland.gov.

Maryland's open data portals contain over 1,000 datasets of agency data. The intent of the portals is to provide the public with access to state data for transparency, accountability, performance, and results. County and association partners contribute additional datasets so that Maryland's open data portals offer centralized access to public data in machine readable format. The format allows Portal customers to explore, export, feed, filter, and visualize all of the datasets on the Portal.

2017 Open Data Portals / Council on Open Data Highlights

- The Maryland Open Data Portal ranked #1 in the nation for open data portals by think tank the Center for Data Innovation.ⁱ
- Improvements in processes used by agencies to keep datasets up-to-date on the Portals.
- Automated connections to data ensure customers have access to the most up-to-date data.
- Data quality focus to ensure datasets contains accurate data.
- Expansion of county, association, and federal partnerships for data exchange. For example, the Maryland Association of Counties is now hosting their research data on the Maryland Open Data Portal.

The 2017 Maryland Council on Open Data Annual Report describes accomplishments and initiatives in more detail, including top search terms on the Portals, use cases for open data, and data governance activities.

Background

Maryland's [Open Data Act](#) (State Government, Section 10-1501 through 10-1504) became effective on June 1, 2014. This legislation includes instructions for the collection and storage of data online, and its availability to the public. Open data makes state data easily accessible, self-service and, on-demand.

The statute also established the Council on Open Data, a group of 37 people who lead Maryland's open data. The duties of the Council are to recommend, coordinate, identify, advise, encourage, plan, promote, and advocate for Maryland's open data. The Council is required to meet twice a year and to publish this report annually.

The intent, of the Open Data Act, is to provide transparency so that businesses, residents, visitors, and civil servants can use state data to aid in decision making. Moreover, the transparency of open data helps improve accountability, as data owners share the responsibility for ensuring that data is open and available to the public. Open data also has the potential to help improve performance, by enabling greater analysis of data and providing more opportunities for collaboration.

This 2017 Annual Report, from the Council on Open Data, provides readers with a greater understanding of Maryland's open data, activities of the Council, and the Council's outlook for open data in 2017.

Meet the Council on Open Data

The Council consists of the following 37 members:

<i>Executive Branch Agency Secretaries and Coordinating Office Directors (25)</i>	
Secretary of Agriculture	Joseph Bartenfelder
Secretary of the Environment	Ben H. Grumbles
Secretary of Natural Resources	Mark J. Belton
Secretary of Planning	Rob McCord (Acting)
Secretary of Transportation	Pete K. Rahn
Secretary of Housing and Community Development	Kenneth C. Holt
Secretary of Commerce	R. Michael Gill

Secretary of General Services	Ellington Churchill, Jr.
State Superintendent of Schools	Karen B. Salmon, Ph.D.
Secretary of Health	Dennis R. Schrader
Secretary of Information Technology	Michael Leahy (Acting)
Secretary of Public Safety and Correctional Services	Stephen T. Moyer
Secretary of State Police	Col. William M. Pallozzi
Director of Assessments and Taxation	Michael L. Higgs, Jr. (Acting)
Secretary of Budget and Management	David R. Brinkley
Adjutant General of the Military Department	Maj. Gen. Linda L. Singh
Director of the Maryland Emergency Management Agency	Russell J. Strickland
Secretary of Labor, Licensing and Regulation	Kelly M. Schulz
Secretary of Human Services	Lourdes Padilla
Director of the Governor's State Office (Now the Director of the Governor's Office of Performance Improvement)	Michael Morello
Governor's Homeland Security Advisor	Walter F. Landon
Executive Director of the Governor's Office of Crime Control and Prevention	V. Glenn Fueston, Jr.
Executive Director of the Maryland Institute for Emergency Medical Services Systems	Kevin G. Seaman, M.D.
Executive Director of the Department of Legislative Services	Warren G. Deschenaux
State Archivist	Timothy D. Baker

<i>Appointee from Senate and Appointee from House of Delegates (2)</i>	
Senate of Maryland	Senator Bill Ferguson
House of Delegates of Maryland	Representative Bonnie L. Cullison

<i>Appointees of elected officials or employees from local entities to represent each of the following groups of counties (5):</i>	
Allegany County, Frederick County, Garrett County, and Washington County	John E. (Bud) Gudmundson
Caroline County, Cecil County, Dorchester County, Kent County, Queen Anne's County, Somerset County, Talbot County, Wicomico County, and Worcester County	Michael S. Scott, Ph.D.
Anne Arundel County, Calvert County, Charles County, and St. Mary's County;	William E. Dollins, III
Montgomery County and Prince George's County	Harash N. (Sonny) Segal
Baltimore City, Baltimore County, Carroll County, Harford	Rob Livermore

County, and Howard County	
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<i>Appointees from the private, private utility, academic, or nonprofit sectors (5):</i>
Scott Shaffer
David Zlowe
Linda M. Loubert, Ph.D.
Elliot Plack
Vacant

Appointment of New Council Members

Five of the Council members represent local entities and five of the Council members represent the private, private utility, academic or nonprofit sectors. Each is appointed to serve a term of four years. Five members have been appointed to serve an initial three-year term for staggered membership. Five of the appointments expired in 2017, and the other five in 2018. It is important that the Council invest time this year to identify new members to replace expiring appointments.

Status of Open Data in Maryland

Demand for open data is growing, and customers, constituents, and businesses expect data to be available to them as fast as they request it. Maryland provides open data access through two open data portals:

Open Data Portal
<http://data.maryland.gov>

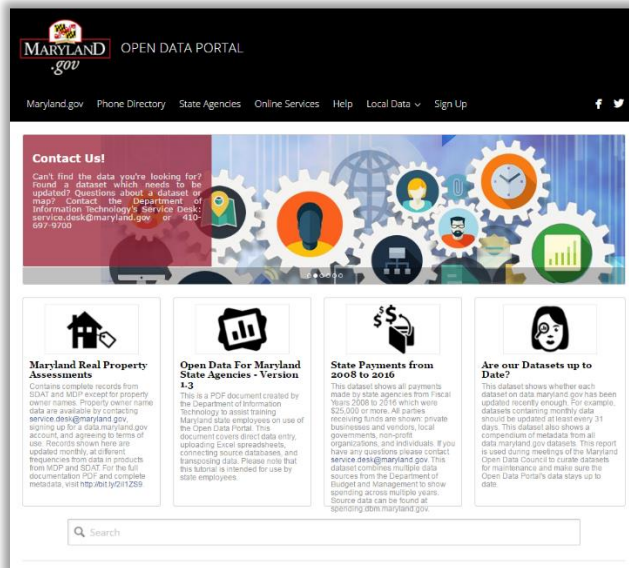


Figure 1: Screenshot of Open Data Portal homepage

GIS Data Catalog
<http://data.imap.maryland.gov>

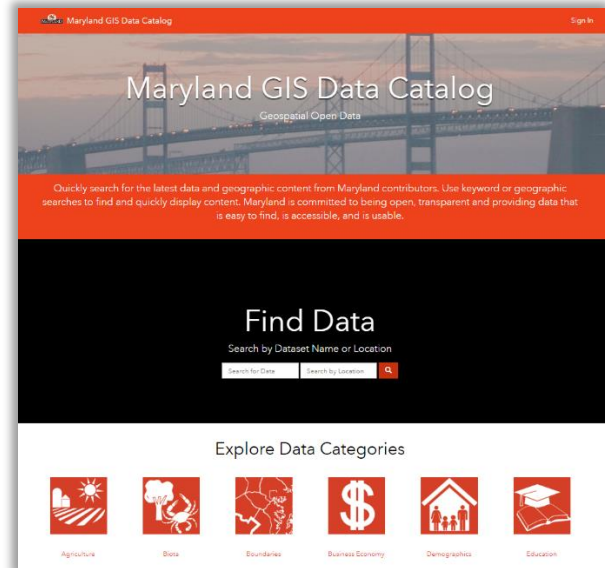


Figure 2: Screenshot of GIS Data Catalog homepage

Maryland Open Data Portal

The Maryland Open Data Portal is the state's primary open data portal and currently hosts approximately 350 datasets contributed from 34 state agencies. Throughout 2017, efforts were made to collaborate and centralize additional datasets from partnering jurisdictions. Based on these efforts, an additional 600+ datasets are shared from approximately 7 partnering jurisdictions, and accessible through this centralized resource. For example, counties federate data from their open data portals to the state's portal. Federal partners, including the U.S. Census Bureau, through the Maryland State Data Center also contribute significant datasets. The state also established a partnership with the Maryland Association of Counties (MACo) in 2017 and they now store data from their research initiatives on the Maryland Open Data Portal. The value of this allows portal customers to access MACo research on county tax studies, and also includes the ability to compare the salaries of county employees for hundreds of positions.

2017 Most Popular Search Terms on the Open Data Portal

1. licensed veterinarians 2017
2. county
3. facilities
4. wetlands of special state concern
5. assessment
6. property
7. business
8. jobs
9. roads
10. education

Additional popular search terms, from 2017, include: crash, traffic, crime, race, Maryland statewide vehicle crashes, and critical area.

The Maryland Open Data Portal is truly open to anyone in the public including internationally, and in many cases customers connect Application Programming Interfaces (APIs) and bots to datasets that ping the portal as often as every minute. Because of this, there are often search terms that make the top 10 list that do not necessarily reflect a Marylander doing a keyword search on the portal, but are rather a bot pinging the portal for specific keywords. For example, there is a crime watchdog organization that uses an API to ping for data related to crime-related keywords daily.

2017 Most Popular Dataset Downloads on the Open Data Portal

1. Minority Business Enterprise: Statewide Directory – MBE, DBE (Disadvantaged Business Enterprise), SBE (Small Business Enterprise), and ACDBE (Airport Concession Disadvantaged Enterprise) Certified Business
2. Maryland Port Administration General Cargo
3. Violent Crime & Property Crime by County: 1975 to Present
4. Violent Crime & Property Crime by Municipality: 1975 to Present
5. Maryland Real Property Assessments: Hidden Property Owner Names
6. Violent Crimes & Property Crime Statewide Totals: 1975 to Present
7. MTA Average Weekday Ridership – by Month
8. Licensed Veterinarians for Fiscal Year 2018 (July 1, 2017 through June 30, 2018)
9. Baltimore City Real Property Assessments: Hidden Property Owner Names
10. Licensed Veterinarians for Fiscal Year 2017 (July 1, 2016 through June 30, 2017)

Additional popular dataset downloads include: lead paint inspectors, electricity generation, accredited veterinarians, crime rate, State of Maryland payments, employment, unemployment, and labor force data.

Maryland Geospatial Information Systems Data Catalog

The Maryland Geospatial Information Systems (GIS) Data Catalog is part of the Maryland Integrated Map (MD iMAP) program which promotes distribution of state geospatial data and services. The GIS Data Catalog currently hosts approximately 670 datasets contributed from 28 state agencies. Throughout 2017, efforts were made to maintain a comprehensive listing of open data sites from partnering jurisdictions. Based on these efforts, a list of 67 partnering jurisdictions is available at <http://imap.maryland.gov/Pages/data-download.aspx>.

2017 Most Popular Datasets on the GIS Data Catalog

1. Maryland Political Boundaries – County Boundaries (Detailed)
2. Maryland Property Data – Tax Map Grids
3. Maryland Property Data – Parcel Points
4. Maryland Wetlands - Wetlands, Polygon (Department of Natural Resources)
5. Maryland Traffic Cameras - Traffic Cameras
6. Maryland Waterbodies - Rivers and Streams (Detailed)
7. Maryland Census Data - Census Tracts
8. Maryland Bathymetry - Chesapeake Bay Contours
9. Maryland Annual Average Daily Traffic - Annual Average Daily Traffic (SHA Statewide AADT Lines)
10. Maryland Housing Designated Areas - Communities of Opportunity

Additional popular datasets, from 2017, include: bathymetry, incentive zones, watersheds, hurricane storm surge, wetlands, living resources, rivers and streams and green infrastructure.

Both portals offer search, discover, display and download capabilities in a variety of formats to meet a broad spectrum of customers. As demand for data grows and requests for self-service, on-demand access continue to increase, we continue to strive to deliver a cost effective and value-added product to those customers. One way this is done is by posting thousands of rows of data for data scientists to export from the portals for import and analysis in their own tools.

2017 Most Popular Dataset Downloads on the GIS Data Catalog

1. Maryland Political Boundaries – County Boundaries
2. Maryland Education Facilities – K thru 12 Education (Public Schools)
3. Maryland Road Centerlines – Local and Other Roads
4. Maryland Marine Boundaries – Shoreline
5. Maryland Property Data – Parcel Points

6. Maryland Floodplain – Effective FEMA Floodplain
7. Maryland Physical Boundaries – County Boundaries (Detailed)
8. Maryland Road Centerlines – Interstates
9. Maryland Road Centerlines – Maryland Routes
10. Maryland Political Boundaries – State Boundary

Additional popular dataset downloads include: rivers and streams, census tracts, wetlands, land use/land cover, living resources, protected lands, and bus routes and stops.

Maryland's open data portals continued to see an increase in traffic in 2017. We believe this is the result of 3 factors:

1. Governor Hogan and the Administration's commitment to transparency, accountability, performance, and results.
2. Portal administrators listening to the needs of their constituents and collaborating with agencies to provide valuable and reliable data in the portals.
3. Constituents finding the Open Data Portal and the GIS Data Catalog through improved search engine optimization.

Maryland's Open Data Visualization Examples

In addition to data downloads, both portals also provide Application Programming Interfaces (APIs) that enable the creation of visualizations, in the form of maps and dashboards. Visualizations are an integral part of the transparency, accountability and performance management that Maryland's open data offers, as they provide a format that is easy to consume, comprehend and translate into useful information and insights.

Example #1 – Maryland Department of Commerce

The Department of Commerce has developed an interactive dashboard that provides a comparison between Maryland Counties, the State of Maryland to other States and metropolitan cities nationwide. Through this visualization, customers can compare information such as demographics, education, taxes, transportation, quality of life, workforce, utilities, economy, and technology. This dashboard utilizes data provided by the Department of Commerce, the Department of Planning, the Department of Labor, Licensing, and Regulation, and many others. All of this data can be found on the Maryland Open Data Portal.

The development of this dashboard provides the opportunity to display data in two formats: as a table with rows of data and as a dashboard that tells the story of the impacts from this program.

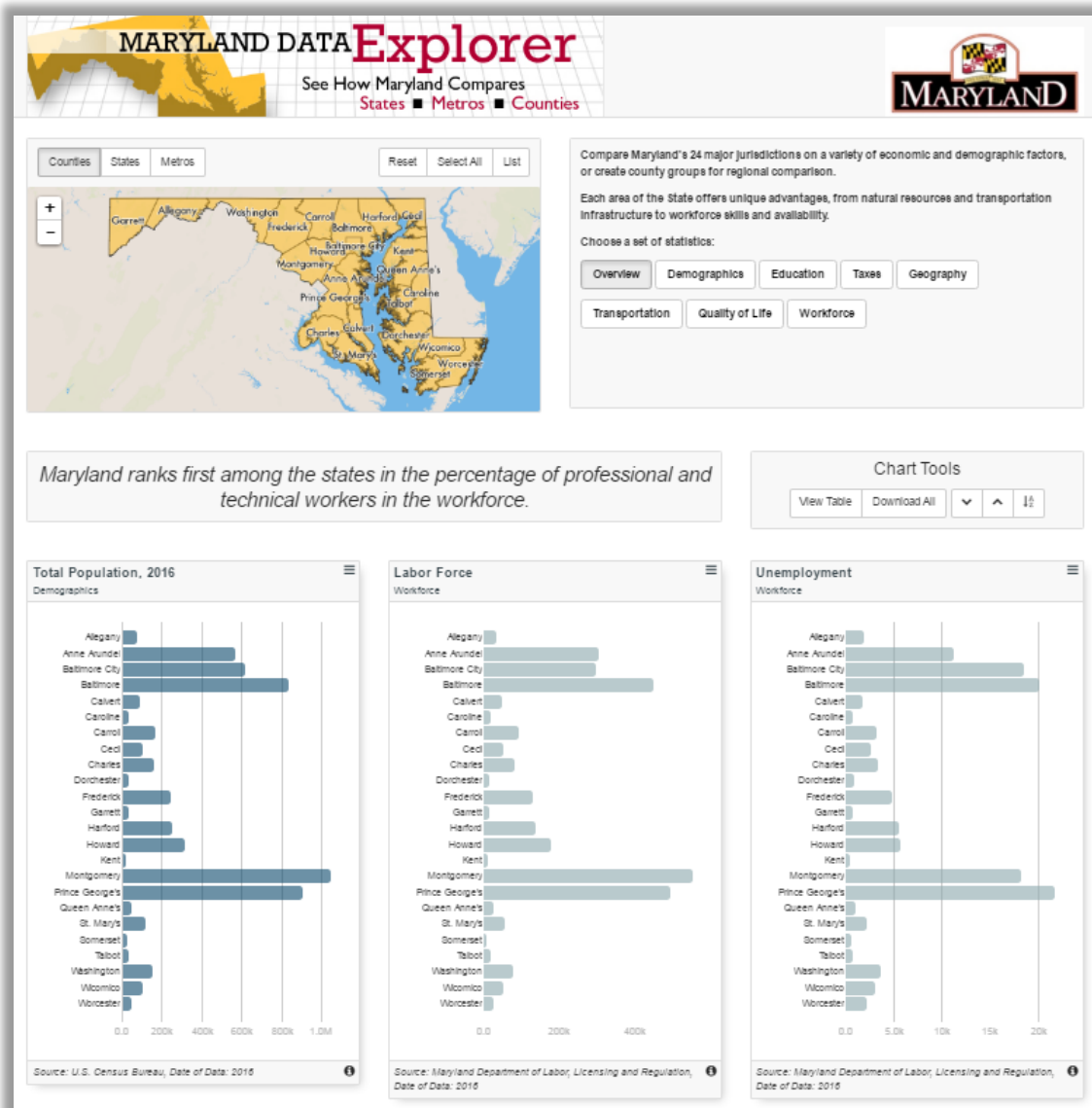


Figure 3: Maryland Data Explorer Developed by the Department of Commerce

Employment, Unemployment, and Labor Force Data
 This dataset uses seasonally adjusted data from the US Bureau of Labor Statistics to present information on Maryland's labor force participation rate, employment rate, and unemployment rate.

Date	Year	Month	Date Label	Civilian Non-institutional Population	Civilian Labor Force	Labor Force Participation Rate	Employed	Employment Rate	Unemployed	Unemployment Rate
2007 Jan 01	2007	01	Jan 2007	4,312,014	2,971,757	68.9%	2,862,374	66.4%	109,383	3.7%
2007 Feb 01	2007	02	Feb 2007	4,314,108	2,968,319	68.8%	2,862,162	66.3%	107,127	3.6%
2007 Mar 01	2007	03	Mar 2007	4,316,235	2,966,728	68.7%	2,861,549	66.3%	105,179	3.5%
2007 Apr 01	2007	04	Apr 2007	4,318,781	2,964,828	68.6%	2,861,066	66.2%	103,762	3.5%
2007 May 01	2007	05	May 2007	4,321,081	2,964,240	68.6%	2,861,115	66.2%	103,125	3.5%
2007 Jun 01	2007	06	Jun 2007	4,323,615	2,965,051	68.6%	2,861,858	66.2%	103,193	3.5%
2007 Jul 01	2007	07	Jul 2007	4,326,118	2,966,888	68.6%	2,863,204	66.2%	103,684	3.5%
2007 Aug 01	2007	08	Aug 2007	4,328,119	2,968,203	68.6%	2,864,973	66.2%	104,230	3.5%
2007 Sep 01	2007	09	Sep 2007	4,332,280	2,971,568	68.6%	2,867,189	66.2%	104,379	3.5%
2007 Oct 01	2007	10	Oct 2007	4,335,243	2,973,704	68.6%	2,869,756	66.2%	103,948	3.5%
2007 Nov 01	2007	11	Nov 2007	4,337,998	2,975,569	68.6%	2,872,531	66.2%	103,038	3.5%
2007 Dec 01	2007	12	Dec 2007	4,340,521	2,977,514	68.6%	2,875,353	66.2%	102,161	3.4%
2008 Jan 01	2008	01	Jan 2008	4,342,905	2,979,811	68.6%	2,877,661	66.3%	102,150	3.4%
2008 Feb 01	2008	02	Feb 2008	4,344,772	2,982,567	68.6%	2,879,995	66.3%	102,572	3.5%
2008 Mar 01	2008	03	Mar 2008	4,346,938	2,985,879	68.7%	2,879,149	66.2%	106,730	3.6%
2008 Apr 01	2008	04	Apr 2008	4,349,192	2,989,649	68.7%	2,878,199	66.2%	111,450	3.7%
2008 May 01	2008	05	May 2008	4,351,442	2,993,685	68.8%	2,876,486	66.1%	117,199	3.9%
2008 Jun 01	2008	06	Jun 2008	4,354,007	2,997,941	68.9%	2,874,433	66%	123,508	4.1%
2008 Jul 01	2008	07	Jul 2008	4,356,418	3,002,266	68.9%	2,872,167	65.9%	130,099	4.3%
2008 Aug 01	2008	08	Aug 2008	4,360,469	3,006,565	69%	2,869,479	65.8%	137,086	4.6%
2008 Sep 01	2008	09	Sep 2008	4,364,380	3,011,044	69%	2,865,987	65.7%	145,057	4.8%

Figure 4: Labor Data found in Open Data Portal

Example #2 – MDOT State Highways Annual Average Daily Traffic (AADT)

The Maryland Department of Transportation State Highways Administration (SHA) has developed an interactive map that shows the Annual Average Daily Traffic volume data collected from more than 8,700 program count stations and 91 automatic traffic recorders (ATSS) located across the state. Through this visualization, a customer is provided with a search and view capability to the latest AADT information using a map interface and address search tool. This visualization also supports tabular data downloads from within the map viewer.

The development of this map provides the opportunity to display data in two formats: as stand-alone datasets, with attribute tables and as a map that combines these datasets to tell the impact of this program.

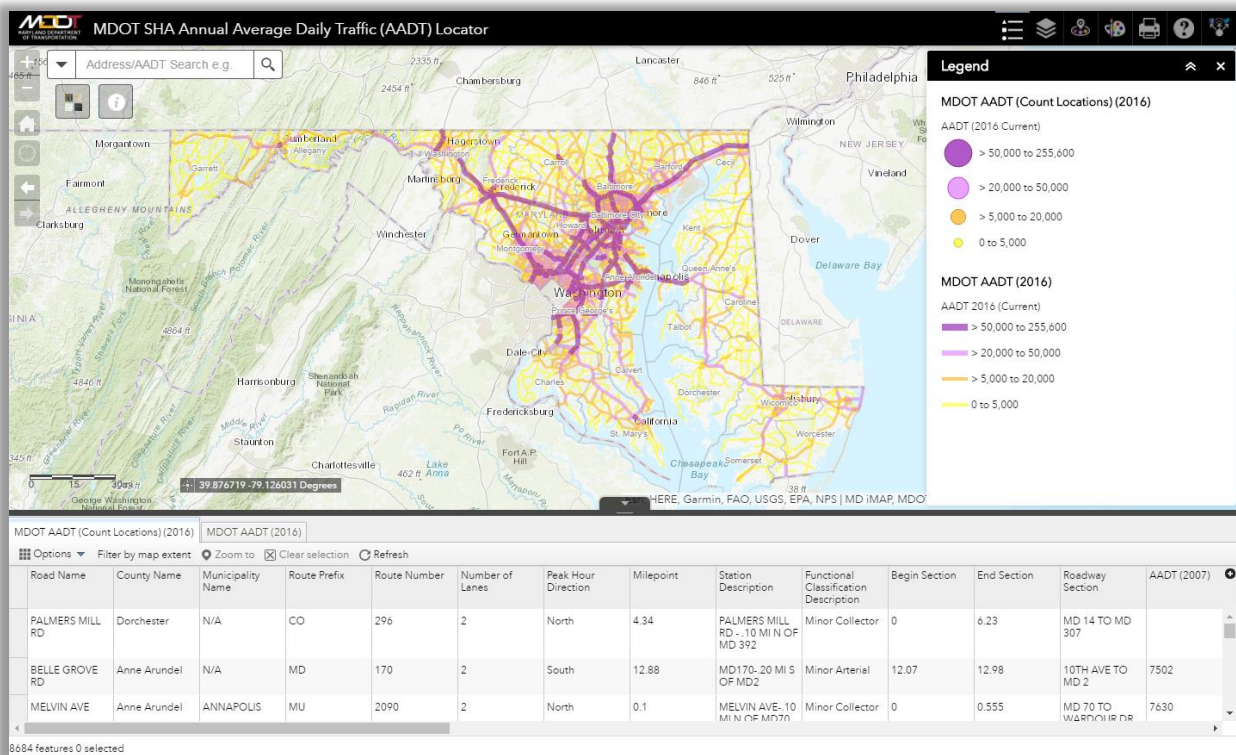


Figure 5: AADT Map Visualization

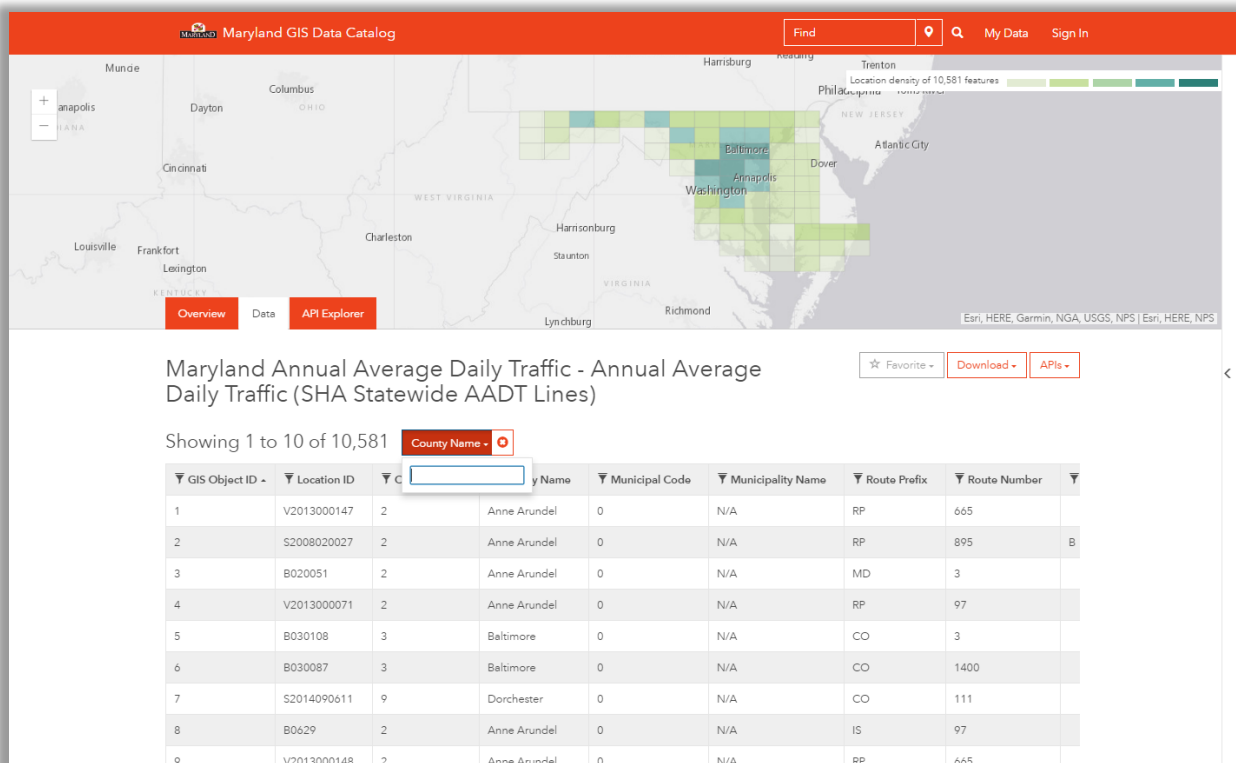


Figure 6: AADT data table view from MD iMAP Open Data Portal

Additional examples of visualizations, dashboards and maps, of data hosted on the Open Data Portal and the GIS Data Catalog, are listed below.

DASHBOARDS	MAPS
<ul style="list-style-type: none"> • Maryland Data Explorer • Maryland Smart Energy Investment • Give Maryland 	<ul style="list-style-type: none"> • Maryland Coastal Atlas • Maryland CHRC Traditional Grantee Map • Maryland Bay Trust Fund Mapper

Data Governance

The Department of Information Technology and the Governor's Office of Performance Improvement developed guidance and standards for state agencies to identify datasets to publish on Maryland's open data portals. This includes procedures for submitting and maintaining data on the open data portals.

The screenshot displays the Maryland Open Data Portal interface. At the top, the Maryland.gov logo and 'OPEN DATA PORTAL' are visible. A navigation bar includes links for Maryland.gov, Phone Directory, State Agencies, Online Services, Help, Local Data, and Sign Up. The main content area features a title 'Open Data Portal Tutorial for Maryland State Agencies' with a sub-tab 'Administrative'. Below the title, a description states: 'This is a PDF document created by the Department of Information Technology (DoIT) and the Governor's Office of Performance Improvement to assist training Maryland state employees on use of the Open Data Portal, https://data.maryland.gov. This document covers direct data entry, uploading Excel spreadsheets, connecting source databases, and transposing data. Please note...' followed by a 'More' link. To the right, metadata indicates the document was 'Updated July 31, 2017' and 'Data Provided by Department of Information Technology'. A 'Preview' section shows a thumbnail of the PDF document. The document's title page reads 'Open Data for State Agencies 101 Page 1' and 'Open Data Portal Tutorial for Maryland State Agencies', developed by the Department of Information Technology and the Governor's Office of Performance Improvement. A 'Table of Contents' lists: Introduction (2), Glossary (2 - 3), Pros and Cons of Uploading Data to https://data.maryland.gov: Three Methods (3 - 4), and Tutorial A: Direct Data Entry (4 - 9).

Figure 7: Open Data Tutorial for Maryland State Agencies

Additionally, working sessions were held throughout 2017 to demonstrate the workflow for creating datasets within the open data portal and the process for scheduling the maintenance of data. These sessions will continue to be held in 2018.

Data Maintenance

When a State agency creates a dataset in the open data portal, there is a maintenance timeframe that is selected. This may include daily, weekly, monthly, or annual data updates. A goal for 2017 has been to improve the overall timeliness of the data updates on the portal. At the end of 2016, there were 190 datasets that had not been updated in accordance with their selected maintenance timeframe. To address this, the Department of Information Technology developed a Data Updates Dashboard to allow data owners to identify which of their datasets were up-to-date and which were in need of data updates. Additionally, the Governor's Office of Performance Improvement worked with Data Coordinators, at each agency, to support the data update process and streamline the data updates. As a result of this effort, the number of out-of-date datasets in the portal has gone from 190 to fewer than 20 for three consecutive quarters. The Governor's Office of Performance Improvement and the Department of Information Technology will continue to work with agencies, across the state, to ensure that the Open Data Portal datasets are regularly maintained and updated.

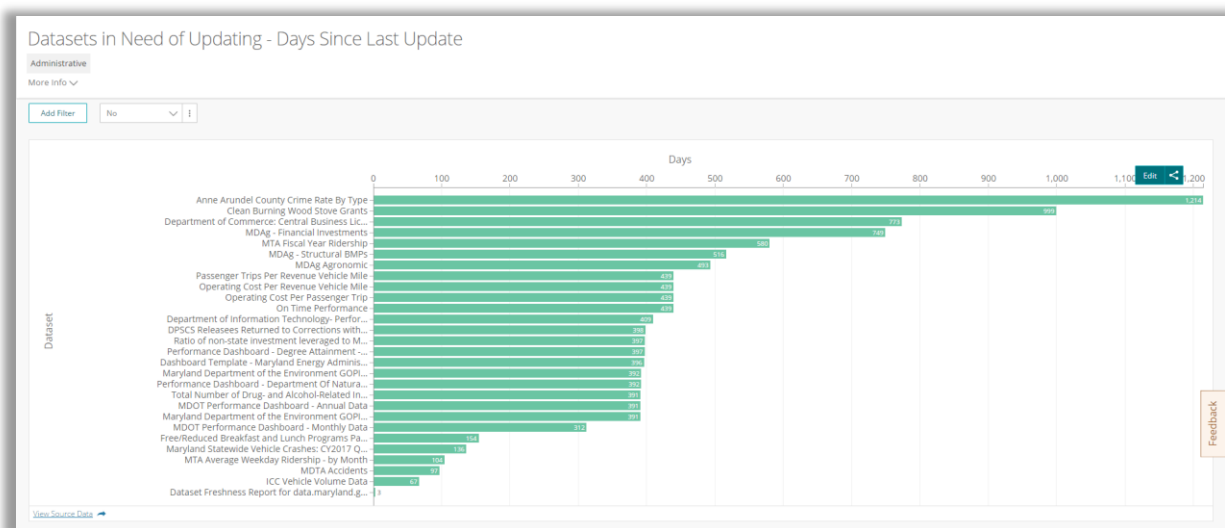


Figure 8: Data Freshness Chart Showing Datasets in Need of Updating

Data Interoperability

Throughout 2017, the Governor's Office of Performance Improvement and the Department of Information Technology have been coaching agencies and customers on how to take advantage of the application programming interfaces (APIs) in the Maryland Open Data Portal. API use

helps to ensure data interoperability. API use also ensures customers are using the most up-to-date data on the Portal. One-on-one coaching and information sharing webinars were used to promote the use of data interoperability. The Maryland Open Data Portal has a number of filtering and visualization tools that can be leveraged to display data. Additionally, customers can connect data from the Portal to third party analytics and visualization software. By taking advantage of this capability, customers are able to extend data analysis to best in class analytics software in order to gather additional insights from the data. We will continue to promote data interoperability in 2018.

Workgroup Development

The Council established two workgroups to carry out initiatives identified by the Council. These workgroups are:

- Administration and Management
- Outreach and Training

Administration and Management

The Administration and Management Workgroup was created to develop guidelines of governance, for the Council workgroups, that extend beyond the statutory specifications. Guidelines would create the process for establishing and organizing workgroups, who serve in an advisory role to the Chair and Vice-Chair of the Council, to include their composition and structure, meeting frequency, process for voting to present information under advisement, and operating procedures.

In 2018, the Administration and Management Workgroup intends to submit proposed guidelines for organizational governance, to the Council, for consideration. Once a consensus is achieved, the Workgroup will provide the Chair and Vice-Chair of the Council with a recommendation on how to proceed with establishing guidelines for Council workgroups.

Additionally, the term for five of the Council appointees will expire in June of 2018. The Administration and Management Workgroup will conduct the search, selection, and support the application submittal of the proposed appointees for the term starting in July of 2018.

Outreach and Training

The Outreach and Training Workgroup was created to draft the communications and collateral for increasing awareness about Maryland's open data. The workgroup has been developing and implementing ways to encourage the executive, legislative, and judicial branches, as well as local entities, to increase participation in Maryland's open data.

This includes increasing knowledge and transparency about the value and reliability of Maryland's open data portals and developing and implementing strategies to inform Maryland institutions, such as research libraries and educational institutions, on where to find and how to work with Maryland's open data portals.

2017 activities included speaking at the Maryland Association of Counties Annual Conference, promoting open data through Maryland's University system, collaborating with the U.S. Census Bureau and the National Governor's Association, participating in research with Pew Charitable Trusts, and participating in the Socrata Connect National Open Data Forum and user group.

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ⁱ Best States for Data Innovation; Center for Data Innovation; 2017; Online retrieval
<http://www2.datainnovation.org/2017-best-states-data.pdf>